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ARDIGO, ROBERTO

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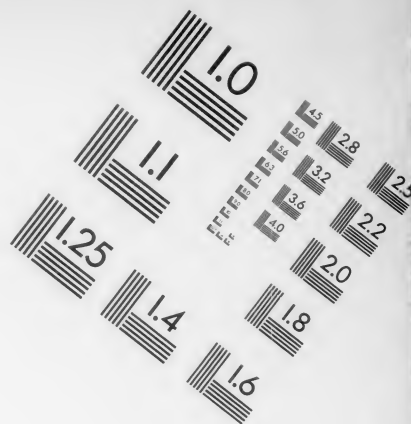
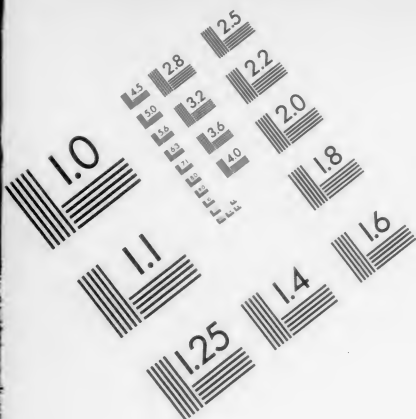


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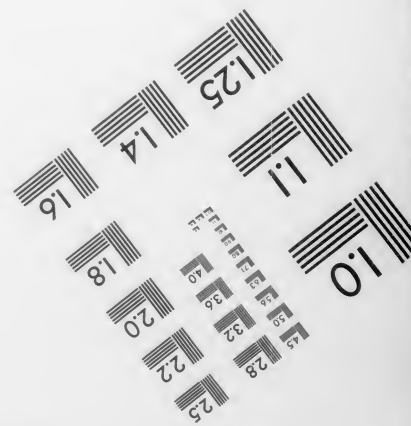
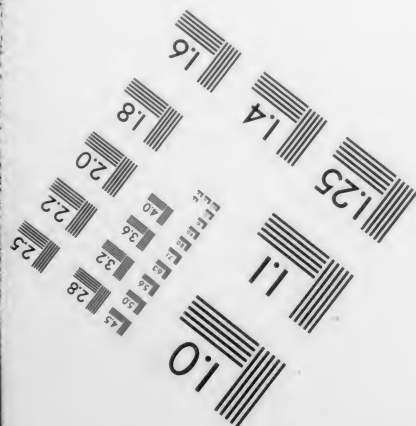
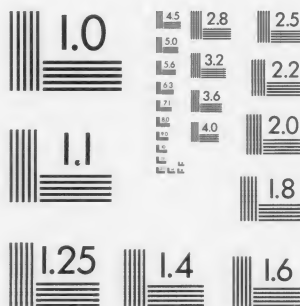
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Robert Ardigò

*Professor of the History of Philosophy
in the University of Padua (Italy)*

An Inconsistent Preliminary
Objection Against Positivism

A TRANSLATION FROM THE ITALIAN

BY

EMILIO GAVIRATI.

W. HEFFER & SONS LIMITED,
CAMBRIDGE, ENGLAND.

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PREFACE BY THE TRANSLATOR.

ROBERT ARDIGÒ, the author of the present pamphlet and the leader in Italian Positivism, was born on the 28th of January, 1828, at Castel Didone, a village in the province of Cremona in the Northern part of Italy. Educated very religiously by his mother, the wife of an engineer, he undertook in 1845 his theological studies, to take then, with deep religious fervour, holy orders in 1851. In the course of the successive twenty years however, his creed and metaphysical opinions having been superseded by the conclusion to which he came in consequence of his profound studies in Natural Science and through his Psychological Researches, he found himself obliged to divest himself of his sacerdotal cloth. He was at that time Professor of Philosophy in the Lyceum of Mantua, where he remained till 1881, when he was appointed to teach the History of Philosophy in the University of Padua. He retired in 1908, after having published ten volumes of Philosophical Works which represent to my mind the most glorious and successful attempt that has ever been performed by Positive Science to give a really satisfactory answer *at last* to the most abstruse philosophical problems that have ever puzzled the most acute minds of the superior representatives of mankind.

The present pamphlet is one of Ardigò's minor works and is contained in the second part of the tenth volume of his *Philosophical Works*. The reading of it is of the greatest interest, since in it are exhibited the answers (to my mind irrefutable) to the criticisms commonly raised against Italian Positivism, especially by those who rely on Bergson's and Boutroux's positions, which are nowadays so much the fashion.

My dream is to find an English reader of the present work who might help me to translate and to publish one of the main works of my great Master: for instance, the book "*On Truth*," or that "*On the Unity of Mind*," or that "*On Reason*."

Not being familiar with the English language in general, and the philosophical English language in particular, I trust that this confession of mine and my admiration for a man whom I consider as the Saint George of the Metaphysical dragon may be a sufficient reason for my being pardoned for all the errors I have committed in attempting to make known to English readers an essay written by a man gifted with extraordinary intellectual power.

I take advantage of this occasion to express my best thanks to Professor Ardigo; who gave me leave to publish my translation: to Signori Rag; Luigi Della Torre and Ing. Eugenio Rignano, who have generously accepted to bear the printing expenses of my translation, and to Mrs. Giulia Bosio, who has corrected many of my errors.

EMILIO GAVIRATI.

Via Felice Bellotti 15,
Milan, Italy.

I.

On behalf of what is called Modern Idealism, it is said by some Italian opponents ⁽¹⁾ that in Positivism there is to be found this fundamental fault; namely, that according to the method which the positivist has prescribed to himself, the Subject ought, in his system, to become an Object which cannot have, therefore, any of the characteristics belonging to subjectiveness.

Then, in order to illustrate the same prejudication they accompany its statement with a multitude of criticisms of which the most frequently used are the following:

"(a) Positivism professes the Fact to be the sole criterion of Truth without however, being able to premise any theory of Knowledge, which might be the justification both of this principle and of the value assigned to the Fact itself: Positivism assumes the Fact in its objective meaning so that in the first place, Positivism is put in the position of being unable to recognize both the distinctive peculiarity of the Psychological Fact ("psichicità") and the impossibility of drawing it out of introspection. In the second place, Positivism is compelled to consider the Psychological Fact as being a simple aggregate of atoms which are combined in that very manner in which the data belonging to Objectiveness combine.

(b) Positivism does not admit:

Firstly: That psychical facts are forms (or 'values' as they are accustomed to call them) emerging always *ex novo* and quite different from their own compounding elements, and consequently not to be derived from them; so that in psychical facts only their quality is of importance and their quantity is only apt to be set in relief, because quantity does not belong to them and is only pertaining to the physical facts.

Secondly: That the characteristic of Psyche is the unity into which its present and past are melted; a unity which is in contrast to that multiplicity which is peculiar only to the external world.

⁽¹⁾ I do not mention names because my only object is to combat what I consider to be an error, and also in order that I may be in a better position to formulate my own thought more clearly and more fully.

Thirdly: That two fundamental laws rule the Psyche; the Law of Abbreviation and the Law of the Heterogeneity of Purposes.

(c) The Positivist, in attributing to the psychical datum no more than Representativeness does not perceive that such a quality as this is always accompanied by Sentiment and Will, both of which are the reason of the psychical phenomenon in general and of the moral one in particular. The Positivist therefore, cannot admit that free spontaneity aiming at an end which is pertinent to the psychical phenomenon: in fact he starts with the inadmissible preconception that the above mentioned psychical phenomenon is entirely dependent upon the physical one."

Those who are acquainted with my writings, would not only immediately perceive that the objection and criticisms against Positivism formulated above have no foundation whatever to support them, but they would also see that the opponents of Positivism (either because they do not know, or because they take no notice of my writings) while they are slandering Positivism, as it is understood in Italy, come also to attribute entirely to foreigners those scientific doctrines that were taught in our own country, not only before they were taught abroad but better and more fundamentally and with greater resolution.

At any rate it will not be a useless thing to summarize from my above mentioned writings the points which concern this question, showing, besides the falsity of such accusations that the arguments brought against Positivism are based in the main upon the double equivocation of setting forth as Positivism, no other thing than a mere rough undervalued Materialism; and of giving on the other hand, as a *New Idealism* (that is to say the last result of Science) that which, however carefully disguised, is after all analysis nothing else than the very same old metaphysical Spiritualism. The quotations from my works (from the very first ones) that will have to be made in the course of my exposition, may also serve to demonstrate the insipience of that member of the Congress of Parma, who having perhaps dreamt of a recent new phase of my thought, spoke about it at that meeting. ⁽¹⁾"

⁽¹⁾ See "*Bollettino della Societa Filosofica Italiana*," No. 3-4, p. 16.

They say: "*Positivism professes that the Fact must be the sole criterion of Truth; without, however, having ever been able to premise any Theory of Knowledge, which might be the justification both of this principle and of the value assigned to the Fact itself. Positivism assumes the Fact in its objective meaning, so that in the first place Positivism is put in the position of being unable to recognize, both the distinguishing peculiarity of the Psychical Fact and the impossibility of drawing it out from the introspection; and in the second place, Positivism is compelled to consider the Psychical Fact as being a simple aggregate of atoms which might be combined in the very same way as the data that belong to objectiveness.*"

All this may be rightly said of Materialism but not of Positivism, which is an entirely different thing, as I am about to prove.

(a) The Positivist does admit the distinctive peculiarity of the Psychical Fact and the impossibility of knowing it without introspection.

As far back as 1870 I have written ⁽¹⁾ that "when considered in their own peculiarity, psychical phenomena are neither fibres, nor fluids, nor motions, nor any other form whatsoever of matter considered as such." And in that very book of mine, and before one might read in foreign books, and then trumpet about as a novelty, that which was already printed therein ⁽²⁾ I added: "If a sound, for instance, taken as a sound, is essentially a thought and not a reality independent from our mind, the same may also be said not only of extension, which also is essentially a thought, but even of every other idea we attach to the conception of matter. So that he who compares a sound (when apprehended as a *psychical* fact) with the materiality either of the human body or of the organ of hearing, or of the brain, *he does nothing else in the end* but compare two thoughts one with the other."

(b) Very well, and better than the Idealists had ever been able to do, the Positivist did put together a Theory of Knowledge; a theory which, as is natural, justifies to the full his own fundamental principle.

⁽¹⁾ In the book "*Psychology as a Positive Science*." Phil. Works, Vol. I., p. 172.

⁽²⁾ p. 233.

On the Theory of Knowledge, besides the quotations that continually are to be found in my publications, I have written the rather voluminous books on ⁽¹⁾ "Truth," ⁽²⁾ "Reason," ⁽³⁾ "On The Unity of Mind," and have set forth in my paper ⁽⁴⁾ on "The Quadruple Problem of the Theory of Knowledge" a systematic and complete frame of the doctrines particularly treated in those books. In which books and papers I never fail to point out how my Theory of Knowledge (not to say any more) fills one of the usual and very lamentable and disastrous gaps left empty by all the Idealists of the present and of the past; gaps which my theory fills, not only by giving the reason of the objective value of the Heterosynthesis (by means of the doctrine of the "experiment" ⁽⁵⁾), but also by scientifically reinstating for this purpose, the implicit concept of "cause" ⁽⁶⁾.

How far the Theory of Knowledge of Positivism does overcome that of the opponents who are charging us with being unable to build it, will also appear from what I am going to set forth afterwards.

(c) The Positivist assumes the Fact not only as objective but also as subjective, and justifies and determines its value both as internal and as external fact.

The assertion on the part of Positivism of the existence and value of the Psychological Fact and of its peculiarity and importance, has been stated and demonstrated by a hundred passages of my books; for instance by this one taken by chance ⁽⁷⁾ "A sensation consists in the consciousness of having it; therefore in the absolutely necessary affirmation of its own being; affirmation that is necessary for itself and independently from anything else. When several contemporary or successive sensations are given, the affirmation concerns their

⁽¹⁾ Phil. Works, Vol. V.

⁽²⁾ Phil. Works, Vol. VI.

⁽³⁾ Phil. Works, Vol. VII.

⁽⁴⁾ Phil. Works, Vol. X., pp. 203-240.

⁽⁵⁾ Already stated in the book on "Psychology as a Positive Science" (Vol. I. of Phil. Works, p. 407), diffusely examined in the book on "The Psychological Fact of Perception" (Vol. IV. of the Phil. Works). Continually recalled in the next writings and lately in the mentioned one on "The Quadruple Problem of Gnostics."

⁽⁶⁾ Especially in the paper on "The Three critical Moments in the History of Gnostics of Modern Philosophy" (Vol. X of Phil. Works, p. 61-148).

⁽⁷⁾ Phil. Works, Vol. X., p. 215.

own plural being, either in the relation of contemporaneousness or of succession. A sensation, either just now received, or showing itself again memoratively may evoke some other sensations to accompany it: in this case the affirmation of existence concerns them all; it is concerning them as a group."

With regard then to the external Fact, my book on "The Psychological Fact of Perception" ⁽¹⁾ is entirely devoted to the same; I make similar reference in my other publications; in one of which, then recently issued ⁽²⁾ is to be found a summary of my ideas which I now quote in a few words. Perception gives me the external fact (either as "Thing" or as "Event") but the sensation contained in the Perception being that which only corresponds to the external Fact (with which the integrations among which stands the same sensation have nothing to do), so the apprehension we have, when we are perceiving, must be deprived of its accompanying subjectiveness in order that it might guarantee of reality.

✓ In a short, the internal Fact is absolutely certain; while the external one is certain only "sub conditione."

Now how can the opponents say that the positivist takes the Fact only as objective, and that he does not justify and determine its value in order to assure himself of the principle of his method and in order to claim the sole value of it? Or perhaps, the opponents mean to say that it is possible to warrant Truth apart from the ascertainment of Facts?

✓ (d) The world of mind according to the positivists is not an aggregation of atoms mechanically combinable according to the way of the external world.

The psychological atomism (i.e., "enadism" as I have called it) which is peculiar to the traditional philosophy, has been expressly and uninterruptedly combatted in my books, particularly in the one "On Truth" ⁽³⁾, in the other "On The Unity of Mind" ⁽⁴⁾; in the third, which has the following title:

⁽¹⁾ In Phil. Works, Vol. IV. of the year 1886, but in large part published in the year 1882 in "La Rassegna Critica" of Naples, directed by Angivilli.

⁽²⁾ "Metaphysical Thesis, Scientific Hypothesis, Ascertained Fact" (Phil. Works, Vol. X., p. 198-201).

⁽³⁾ From Chap. XXIV. to XXXI. included, from p. 361 to 399 in the first edition of Phil. Works, Vol. V.

⁽⁴⁾ Chapter VII., No. 9 and foll. (p. 512 and foll. of Phil. Works), Vol. VII.

"*The Idealism of the Old Speculation and the Realism of the Positive Philosophy*" ⁽¹⁾; and lastly, in the writing "*The Three Critical Moments in the History of the Theory of Knowledge of Modern Philosophy*" ⁽²⁾. In a passage of the latter ⁽³⁾, for instance, I express myself on the subject as follows: "Although the function of Intelligence does not appear to us under the aspect of a material mechanism (as all the other functions do on account of their being known through the external organs of sense) although the same function is simply apprehended through the medium of its consciousness alone; yet, the function of intelligence as being pertinent to every animal (from protozoa to man) by progressive degrees, is to be considered as a *biological function*; consequently, it originates, evolves, establishes itself into its own decisive aspect and then operates just according to what is required by the organic apparatus on which (under whatever appearance) every vital activity depends. Numberless are the various exciting stimulations . . . but in their manner of acting there are some determinated likenesses, which can cause some determinated sorts of ideations to arise out of the stimulated organism. The more the experience of those stimuli is repeated, the more those sorts of ideations become habitual and fixed; so much so that in the end they become the very same fundamental constitution of the mind; so forcibly fundamental that no psychological re-semblance, nor any casual distinct conception may arise in Psyche without awakening the above mentioned sorts of ideations (directly or indirectly, near or far, the more this or the more that) and without causing the distinct occasional conception itself to become framed by them. And here it is the very vital point of the question to be especially observed; that is the "*RHYTHM*" resulting from several impressions; the peculiarity of ideation in which it consists, etc. . . ."

If I now allude to the dependence of the psychological activity upon the activity of the organic apparatus (to which dependence our opponents make a reserve), we shall afterwards see how much their "*Modern Idealism*" is scientifically grounded.

⁽¹⁾ Phil. Works, Vol. IX.

⁽²⁾ Phil. Works, Vol. X.

⁽³⁾ p. 117, 118.

II.

I. They say "Positivism does not admit:

Firstly: That Psychological Facts are forms (or "values" as they are accustomed to call them) always produced "ex novo" and quite different from their own compounding elements and from them not to be derived; so that in Psychological Facts the only matter of importance is their quality which only may be set in relief in them because no quantity belongs to them it being peculiar only to the Physical Facts.

Secondly: That the characteristic of Psyche is the unity into which its present and past are melted. Unity which is in contrast to the multiplicity that is peculiar only to the external world.

Thirdly: That two fundamental laws are ruling the Psyche; the Law of Abbreviation and the Law of the Heterogeneity of Purposes."

In all these statements our opponents either say things which are not true or insist on some of their doctrines, which cannot be maintained at all. As I am about to prove.

(a) It is pertinent to the very doctrine of Positivism, that Psychological Facts are a sort of form always emerging "ex novo," and in which their compounding parts are always dissimulated.

This has already resulted from what we have said above. But it will now be useful to hear some other witnesses and arguments in order to show, not only that it is not true that Positivism denies such a doctrine, but that on the contrary, such a doctrine has only in Positivism its own explanation, its precise determination, and its more extended, complete and practical use.

In some part of my "*Ethics of Positivists*" ⁽¹⁾ I write: "Representations do not inorganically mix in the Mind so as to preserve in it their single individualities as it may be said of the seeds belonging to a sack of corn. On the contrary representations compound themselves up in the Mind so as to form the peculiar organism of the Psychological life of the conscious subject. Their union is rightly called a simple *association*, when the component parts of the resulting psychological organism keep them-

⁽¹⁾ Phil. Works, Vol. III. (pp. 49, 50).

selves distinct in it; but the psychical organism is called by me a "*specification*" when its psychical totality appears to be quite a different thing in comparison to its own ingredients, and therefore, as a novel psychical species because its components do not keep themselves distinct in it.

This law of specification is a fundamental one in Thought. When all due conditions are given (they cannot here be enumerated) such a law never fails to work, not only as far as regards the relation of representation, but also that of emotion; and it works in such a way as to cause the resulting species to be mathematically proportional to the quality, number, dose of the ingredient of the formation. Mathematically such, just as it happens in the chemical and in every other species of nature, wherein, after all analysis, Mathematics represents nothing but the abstract scheme of all Sciences." And in some other part I write: ⁽¹⁾ "The formation process of Nature is indefinitely progressive; and such it is owing to the possibility of a similar indefinitely progressive specification. Specification is always to be called progressive; because a system of distinct psychicalities (*i.e.*, a specification already formed) may associate with other systems (say with other specifications). In this case, progress consists in the fact that this new specification is such a unity whose elements, instead of being indistinct in themselves, are containing already a distinction." And how often do I not return to this idea in all my books ⁽²⁾?

(2) It is, consequently, just so clear that Positivism does not deny the spoken of fact, as true it is, that the explanation of such a fact cannot be found in the Idealism of our opponents but in Positivism alone; and exactly so in its "*Law of Rhythm*,"—a law that has been developed by me on many and many occasions. In my book "*On Truth*" ⁽³⁾, for instance, I say on this point: "Mental phenomenon is a vital motion, which shows itself under so many various rhythms, as the conscious appearances are; under various rhythms that concert themselves together into the rhythms composed by the thoughts constituted by complex elements. Into these compounded rhythms, I say, on which one

⁽¹⁾ In the book on "*The Natural Making*" (Phil. Works, Vol. II., p. 43).

⁽²⁾ For instance: Vol. VI., p. 165 and foll.; 193 and foll.; VII., p. 58 and foll.; IX., p. 28 and foll.; 186 and foll.; etc.

⁽³⁾ Phil. Works, Vol. V., pp. 232-233.

of them is always predominating and subordinating the others, so as to become characteristic of a given thought and here is the reason of the Association of Likeness and by this it is confirmed not only that an idea is always and merely constituted by elements of sensation; but also that what we call one very same idea may indifferently be constituted by different sensations, because the presumed sameness only depends on the correspondence of the relative rhythmical motions." And I develop, demonstrate, and illustrate later on the same law in many other places ⁽¹⁾

Having given this explanation, I extend and complete its applicability (to our opponents it would seem, unknown) to the formation and function of what is called "*idea*" (about which nearly the whole of my book "*On Truth*" treats) and to the formation of the very specific sensations themselves; as is to be seen, among other passages, in the Note 270 ⁽²⁾ of the "*Psychology as a Positive Science*," a note which is too long to be quoted here.

(b) It cannot, however, be maintained what our opponents here add, namely, that the above mentioned forms always *ex novo* emerging may not be derived from their components.

This proceeds from the mentioned reasons of the arising of the forms always *ex novo* emerging of the psychical facts; and is shown in a direct manner by many passages in my books. Read, for instance, the Note 264 ⁽³⁾ of my lastly quoted work (too long to be transcribed here) and the pages of the text to which it is referred. Those then who are acquainted with my works will know how many times and in how many manners the assertion of the same note and pages are illustrated and confirmed.

(2c) And inconsistent is the so much trumpeted doctrine, that is now so much the fashion, according to which, of the psychical facts, is only to be known what is only of importance in them, namely, their "*quality*"; and not any "*quantity*" at all; the latter being said not to be pertaining to them, but only to objectiveness.

⁽¹⁾ Principally, II., 227-233; V., 246 and foll.; 301 and foll.; 337 and foll.; VI., 97, 226 and foll.; VII., 131 and foll.; Note, 131-134; IX., 42 and foll., etc.

⁽²⁾ Phil. Works, Vol. I., pp. 423-429.

⁽³⁾ pp. 414-422.

On this point, I will firstly and immediately speak about the argumentation, behind which our opponents think themselves absolutely safe, the argumentation of Henry Bergson against the psychophysical law ⁽¹⁾.

In a few words, the reasoning of Bergson is as follows: In the extent of a line (let us take this example in order to make use of the clearest possible one), you can take one portion of it and place it on the rest, and then count how many portions are necessary to cover the whole of the line, so that the resulting number be the measure of it. But the same operation cannot be made with any sensation whatever; because if, in order to get the portion to be afterward summed up with others into the more intense one (which is presumed to be their sum) you compare a small with a larger sensation, you get no more what, in itself, constitutes this larger sensation; for the small one is something specifically different and hence, not comparable with the larger one, in order to say that it be the result of a certain number of the small ones.

But Bergson does not here perceive that an analogous argument may be used with respect to the magnitude in extent of the line; so that if the argumentation is not worth having there, it is worth nothing here; he does not perceive that, if he denies the intensive quantity of the sensation, he comes to deny the extensive quantity of the extent; and therefore, to deny any sort of quantity whatever; or, generally speaking, what is called "*quantity*." I compare the representation of a line one span long to the other a mile long, and say "the first is shorter than the second, which, in consequence, is said to be the longer one. And I compare the representation of the sound caused by a fist knocked down on my desk to the sound caused by the cannon fired near my house; and here, too, the sound caused by the fist is said to be lesser than the other caused by the cannon. Not at all, Bergson would here reply, for we have here two different specialities of data, so that I cannot think of the lesser sound as a portion of the other. But this reasoning is also applicable to the representations of the line a span long and of the other a mile long, they being themselves two psychical data, *i.e.*, two specialities of data.

⁽¹⁾ In his book, "*On the Immediate Data of Consciousness*," I make use of the 5th Alcan Paris edition, 1905.

That reasoning of Bergson, however, does not hold good, because the specialities of the two data do not exclude their concordance in what is belonging to them in common. A span, as such, differs from a mile of the road as such; but they both agree, one with the other, as being two representations of distance. The representation of the noise of a fist differs as a noise from the noise of a cannon shot; but they both agree in as far as they are both of them two representations of sound. The same thing is also true when referred to all the other representations of the most different specialities, because they always and likewise are but conscious facts. Here the reason is why two quite different data, for instance a slight fusty smell and a toothache may be compared between them from the point of view of their magnitude; the reason why it may be said, that the first, compared with the second, is something little.

This is so true, that at last it comes to be admitted also by Bergson himself, who in his very book ⁽¹⁾ writes as follows: "*It does not suffice to say that a number is a collection of unities; it is also to be added that these unities are identical between them, or at least, that they are supposed to be such, since they are counted up. One may certainly sum up the sheep of a flock, and then say that they are fifty, although they are distinguished one from another so well that their shepherd knows each one of them, but the reckoning is possible, because on such an occasion IT BECOMES CONVENIENT NOT TO CARE ABOUT THEIR INDIVIDUAL PECULIARITIES AND KEEP INSTEAD AN ACCOUNT ONLY OF WHAT THEY POSSESS IN COMMON.*"

So that (as the comparable data of the external world are nothing else in the end but conscious data) if we find any quantity to exist in them that depends upon the fact that a quantity is belonging to all conscious data; whether autogenous or heterogenous ones; except their specific forms of quantity, according as the data are, either of the one, or of the other sort. And quantity does so well belong to the psychical facts that it may appear either as "*extent*" (*i.e.*, multiplicity of coexisting data); or like "*duration*" (*i.e.*, multiplicity of successive data); or as "*number*" (*i.e.*, as a discrete multiplicity either of extended or of un-extended data); or as "*intensity*" (*i.e.*, as a multi-

⁽¹⁾ p. 58.

plicity or as an accumulation of data without discontinuity and distinction).

(3). But an objection is here presented; that is to say that the conscious datum may appear either as representative of an object, or as a bare subjective consciousness of itself; and that a quantity is to be realised and affirmed in the first case but not in the second. This is an objection that, however, is only fit to show the confusion caused by a very insufficient (not to say entirely missing) psychological analysis.

Let us omit saying that it is altogether against common sense to affirm the sensation caused by a hundred organ pipes sounding together, not to be greater than the one caused by a single pipe; and let us also not insist upon saying that to deny that a sensation is in itself a quantity, makes it impossible to put any quantity in the objective representation itself, as we will show afterwards.

Now, in order to answer directly the proposed objection, let us take the two following examples: the representation of the run of a bullet shot by a gun and the sensation caused by a hundred organ pipes sounding together in unison. The representation of the run of the bullet is thought of by me as a datum greater than the length of a rod; but if considered in itself, the bullet run is thought of as a single indistinct quantity. Just the same thing is to be said as to the representation of the intensity of the sound of a hundred organ pipes in comparison with the intensity of the sound of one single pipe. The greatest and the lesser data are both in themselves, as well there as here, one indistinct datum; and I can make use of the lesser ones to distinguish the indistinct quantity of the greatest ones. But by the rod, I can measure how many times it is contained in the run of the gun bullet, so as to get a distinct idea of the run and afterwards say, for example, that it is a hundred times greater than the length of the rod. And here is to be seen in what a quantity objectively determined consists; to my indistinct representation of it I connect associatively the representation of the effected operation and that of the number turned out of it; number, which I think to be the exact reason of the greater length; still remaining, however, the indistinct fact of the length of the rod, which I have not yet measured.

But quite the same operation may be performed on the greater indistinct quantity of the complex sound of the hundred organ pipes by saying the total sound I am hearing is exactly the one resulting from the sound of a hundred pipes; and leaving then still indistinct the quantity of sound pertinent to a single pipe.

We see, therefore, that we can operate on a sensation just as we have done on the run of the bullet; on a sensation, which as such, is but a bare subjectiveness; and we see that is possible, therefore, to gain for it that same distinction, which is, then, taken as an objectiveness; consequently the determinated objective quantity may be obtained not only with regard to the length of a line, as considered to be an objectiveness; but also may be gained for a sensation; because it may itself analogously connect with an objective correspondence of its own. As well there, as here, we measure the stimulus that causes the representation, and if, by measuring the stimulus we gain a greatness there, we must gain the same here also. Two forms of magnitude; there and here; the bare representation indistinct, the measurement of the stimulus distinct. The objective quantity, therefore, consists in mentally substituting the indistinct representation for the number turned out of the measurement.

And let it not be said, in order to contradict what has been now stated that the datum of a sound, until it is only an objective sensation, stands no more in the same ratio to the objective datum with which it is corresponding, because the very same thing is then exactly to be said of the representation of a line; so much more so, that after all, the congruity is always persisting, even if by reason of the physiological properties of the organism, the external increasing in geometrical proportion of a datum be followed, either in arithmetical, or (as the case may be) in a less proportion, by the increasing of the internal datum.

Likewise, let it not be said, that the instance of the sound of the organ pipes cannot be decisive, on account of the impossibility of measuring objectively the immensely greater number of the psychical facts; especially when it is a matter of sentiment; because if the measurement cannot be had by the means which are till now at our disposal, nevertheless, and absolutely speak-

ing, it is possible to be gained—because the psychical facts are always the exact equivalents to the excitements of the physiological apparatus; so that when on the one side, the performing organs and the stimulus undergone were exactly known, and when on the other side, we might designate the unity by which the stimulation were to be measured, we should directly succeed in doing the same operation.

The psychical fact itself, comes therefore, to be a measurable objectiveness and, consequently, a magnitude; just as is a magnitude the actual road, which is measurable by the pole. And it is no more a matter of the representation in the abstract sense (in which intensity and therefore magnitude are neglected) it is no more a matter I say, either for instance, of the abstract representation of the sound, or of that of the road a mile long, which also (as being a mere abstract representation) is no more a length; but only a species or a "*quiddity*," and behold the gross equivocation, which lies as a foundation, under the thesis so strangely erroneous of Bergson who, when speaking of the road, speaks about the actual road; and, on the contrary, when speaking of the sound, speaks of the abstract sound.

4. But then *ad abundantiam*, I will add some other remarks referring to some other parts of the same book of Bergson. A few, it is understood, otherwise I should write a book.

Bergson says:—"That is called the greater quantity which contains another. The thing cannot be understood but as referring to an extent which is thought of as being constituted of parts. An intensity is not an extent; therefore we cannot say that the former either contains any of the latter or that it is a magnitude." How many faults and incongruities in such reasoning as this! Let magnitude be defined by means of the specialities of the magnitude of the extent and it will be no more possible to admit it in the inextension of intensity. Likewise, if someone else would prefer defining magnitude by the specialities of the inextended intensity, it would no more be possible (and through the same logic) to admit it in the extension itself. And when, to the purpose of depriving the psychical fact of its magnitude of extension (which is said cannot be found in it) one comes to deny

that in intensity there is no magnitude, one is obliged to deny also the existence of any magnitude in the physical energy; which, being an intensity, cannot be thought of as a magnitude liable to increase and diminish; so that it would not be possible to affirm that an electromotor power of ten thousand volts is greater than one of only five thousand. Put the case that, as regards the physical energy, it should be admitted that the greatest energy must be understood to be the sum of minima accumulated in it. Why should we not be permitted to think just the same as regards the psychical intensity? So much the more so, that, as we made mention above at number 2 (!) Psychology is in the position of establishing that a psychical datum is always a plurality of minima connected in it. So much the more, that in the exterior world among for instance, the weights of the atoms (which are intended to be the last terms of the descending scale of physical magnitude) there are differences from each other, *i.e.*, there are greater and lesser weights; there is there, for instance, the atom of oxygen, which has been calculated to be sixteen times greater than the one of hydrogen.

5. And, after all, the reasoning set against us, turns to be nothing else but a *syllogistic circle*.

An extent is large, they say, by reason of the parts it contains. And how now can it be such, if there is no magnitude in its compounding parts? A sum of *cipher* magnitudes cannot be an *N* magnitude. That part, absolutely speaking, would be reduced to the infinitely little, *i.e.*, to what, to which no magnitude is attributable because it is always escaping. Effectually the part, or unity, by which you measure, cannot be, at its last extremity, but that minimum of contents and clearness of consciousness to which the representative act may be reduced. This minimum or this last indistinct quantity, *i.e.*, the very intensity itself of the psychical act.

This very thing is, however, thought of also by Bergson himself when, about that Sophism of the Eleatics, which is well known under the name of Achilles, he writes (!) contradicting himself: "The interval which separates two points is infinitely

(!) When referring to Note 270 of my book on *Psychology as a Positive Science*.

(?) p. 85.

divisible, and should motion be compounded of parts like those of the interval itself, the interval would never be got over." He sends back to motion the intensive quantity, but he is compelled to admit it; and by sending it back, he does but send back the difficulty, because the same remark of the infinite divisibility is also concerning motion.

One comes, in short, to the conclusion that quantity, whence one begins, cannot be thought of otherwise but as an intensity ⁽¹⁾ and if an intensity is not a quantity, as Bergson says, he who builds magnitude by these intensive quantities (*i.e.*, inextended data) he makes magnitude become a sum of noughts; that is a non-magnitude. What a treachery to Bergson! This ultimate intensity of the above mentioned particle (which must be a certain magnitude since the total to which it is belonging as a component part is a magnitude), is in the end, nothing else but the thought itself of that same intensity; so that quantity is not only pertinent to our own thought, but must even be in it in order that one may put quantity in the exterior world.

6. Bergson says ⁽²⁾: "*A conscious datum is usually accompanied by some reactions more or less extended in the body. This fact is the reason why one deceives oneself by believing that quantity (which only belongs to these reactions) belongs, on the contrary, to what by itself cannot possess anything else but quality.*"

About this remark, many things are here to be said in order to show more clearly its inefficacy to the effect of denying that quantity is proper to the conscious datum. No possibility of conscious datum without the cerebral work with which the conscious datum effectuates. To a cerebral work may correspond the work provoked in the rest of the organism. This work so provoked, extends, more or less and continuously, into the brain, causing there the cerebral work of its being felt.

This conscious datum may show itself as being alone, so as to be erroneously taken as a mere psychical act altogether independent from any physiological work. The conscious act

⁽¹⁾ This is explained at a length in my book *On Truth* in a part of which (Chap. XVIII.) this intensity is called the "Model," *i.e.*, the absolute unity of measurement for an individual, either a greater or a lesser model remaining an identical space with the proportion of its parts; a model which is the subjective valuation, *i.e.*, the datum having the possibility of becoming a consciousness.

⁽²⁾ Page 24.

may arise together with certain motions showing themselves as external, so as to present itself in their company and its own representation as being in connection with the distinct representation of each of the same external motions. The motions externally knowable, may be produced and known as being external, without our having in the same time the consciousness of their central initial motion, on account of the habitualness, by which the initial central motion may reach at its own effects, through one of its very low degrees of strength, so that it be not afterwards possible to distinguish at all the sensation of it.

This being established, we make the following remarks:—
Firstly: A psychicalty when believed to be such merely for itself, is valued sometimes as a greater and sometimes as a lesser mentality; it is, therefore, always thought of as a quantity. The sorrowful sentiment caused by an experienced loss is less, when it is a matter of a penny fallen into the sea, than when it is a matter of a much beloved son. Secondly: If by reason of the increasing of the central action, the peripheral motions that are accompanying a psychical re-resentment, extend together with the arising of their relative ideas (just as it happens when, on lifting up a weight, we feel that one arm does not suffice for the purpose and we make then use also of the other), the psychical re-resentment increases together with the increasing of the central action and we feel that the same re-resentment is increasing independently from the ideas which (because of the extending of the peripheral motions) little by little join together with it. Thirdly, and lastly: When it is a matter of habitualness when therefore the ideas connected to the peripheral motions can multiply, still remaining, however, either a very slight, or an inadvertent re-resentment of the central action, the sum of those ideas does not absolutely work in causing the central re-resentment to appear to be greater, but such a sum is apprehended simply as being such a total.

7. A great many remarks ought here to be made upon what, to support his own thesis, Bergson says about Number, Unity, and Multiplicity in the first part of the second heading of his book; but doing so, would take us, and in vain, out of the way of the purpose to which we aim. Therefore, as to that

which is concerning those matters, I leave it to what on those topics is diffusely told in my book on *The Unity of Mind*, and mainly in its headings V.-VII. of the first part, and I.-III. of the second. Likewise, as to what Bergson very inadequately writes in his very same heading upon space, I leave it again to what, on this topic, I wrote at length in Chapters XVI.-XIX. of my book on *Truth*.

Here it will suffice to make the following remark. Bergson says ⁽¹⁾ *A moment of time cannot stop in order to be joined by other following moments. If sounds keep separated from each other, it is because they leave some intervals between them. If they are summed up, that is owing to the existence of the intervals between the passing sounds; and how now could those intervals be there, if they were not of space but only of bare duration?*" But if those intervals were of space, we ask, how could then the sounds appear to be successive instead of coexisting data? The fact is that thought in force of the very fundamental law of conception, is embroidered on the two essentially opposite schemes of coexistence (i.e., of Space) and of succession (i.e., of Time); and that the distances, existing between the distinctnesses which are distributed on those schemes, are some of them of time, and some of space; so that between the sounds, which have been here taken as an instance, there are not to be found any intervals of space at all as Bergson holds, but only intervals of time; the representation of Time, on account of the fundamental law of Mind being so obvious, natural and in its own peculiarity inevitable, just as is also the representation of space, representation which differs from that of time only on this point, that while the former is known as being distributed on the line of the reality of Perception, the other is, thought of as lying on the line of Memory.

By suppressing, as Bergson does, the in itself fundamental scheme of duration, the objective successions come to be no more conceivable as such; and by introducing space among the internal successions to distinguish them, we come to turn them again into simple coexistences. And if, as he objects, I can at the same instant represent to myself the different data of

⁽¹⁾ p. 66.

a succession as constituting an order into it, that happens, because I place these several data in the scheme of time by which they become distinct; just as it happens when, by representing to myself the different data of a coexistence as occupying the same point, I place them in the frame of space by which they keep distinct from each other although the thought of them be standing in only one point of cogitation. Just as well as in the scheme of a genus, its several species may be found distinct and ordinate, and in the scheme of a species, the individuals belonging to it.

8. *But it does not need* (Bergson would here say) *the special scheme of duration in order to apprehend a series of data as being successive; because for this purpose it is enough that the different terms of the series show themselves together. When it so happens, we are able to have, through the internal vision of the series itself, a new quality of cogitation, a quality which is not to be gained by any of the separated terms.* Well (I then reply) by such a way it would be analogously easy to remove the scheme of space; for it would be also possible to make a similar, though inverted reasoning about a group of coexisting terms. *Not at all* (Bergson would insist), *because this being a matter of space, I have at my disposal the apprehension of a void and homogeneous medium, which is an actuality and not a quality, a medium on whose different and distanced points I place my terms.* But I would reply: just the same thing is to be said when it is a matter of time; for in this case, I have likewise at my disposal the void medium of duration within whose distanced points I can set my terms just in the same now mentioned way.

But there are some other errors arising from the already referred to reasoning of Bergson. In that same way, by which the sound having the duration of a quaver, is directly for itself, apprehended as being longer than the duration of a semi-quaver, so the extent of one meter is to be apprehended, directly for itself, as being longer than the extent of a half-meter. The void space, so far from being the precedent by which I make use to apprehend the length of extents is, on the contrary, the abstraction of all of them; so that now it turns out again what we already noticed above, i.e., that every quality of *quantum* is entirely based on that quantity which has been firstly apprehended in the same psychical act. Let the

same thing be said about the void duration, which I can likewise conceive as being the void homogeneous medium that is analogous to the medium of space. After what we have been saying, what Bergson adds on the measurableness of space; on motion; on the argumentation of Eleatics; on velocity and simultaneousness; all becomes vain. Nor does it matter to examine one after another all his remarks on this point. Doing so would be making a long and quite useless affair, it being only the matter of the application of those ideas that we have already demonstrated to be erroneous.

And it is also erroneous to say, that the void homogeneous medium of space is an actuality to which any quality does not belong. If it is an actuality, it must possess the quality of being so; and by saying "*space*," we speak of an idea which is specifically different from any other idea whatever, *i.e.*, we speak of a distinct "*quiddity*." If, however, one believes to make space destitute of qualities by saying it is void, he instead does just the contrary, because by adding voidness to space he succeeds in making it further on specified and not simple. And it is also erroneous that "*the actuality of space ought to be understood as being like the actuality of a thing*," as it is clearly said on page 84; and that "*the actuality which may be affirmed of it be not analogous in every respect, to the one of duration, to which actuality is also to be always attributed, of course, in the same meaning of relation, i.e., of relation between successive data*." As for this, I leave it as I have already said, in the above-mentioned chapters of my book on "*Truth*."

9. The new doctrine pleaded by our opponents (and so much exalted on account of its being the fashion) that quantum be only proper to the objective facts and that quiddity be only found to be in the subjective ones is, therefore, a mere sophistry, which comes so far as to deny the very fundamental law of the psychical work and phenomenism, that are both of them only possible on the condition that those emergencies, which are quantitatively greater, may encamp in the mind prevaillingly over those that are quantitatively lesser.

Quality is proper to whatsoever a datum, as well objective as subjective, because it is just that very datum which is pointed out, and not any other. This thing is, at last and hesitatingly, acknowledged by the same Bergson, when con-

tradicting his own assertion that void space be only a quantum, he writes on p. 73 of his book: "*A vrai dire les differences qualitative sont partout dans la nature*."

Likewise, every sort of quantity is essential both to the objective and to the subjective datum. The *indistinct concrete form of quantum* (or "*intensive quantum*") which is the necessary presupposition of the discrete distinctness, is essential as well to coexistence as to succession. The *distinct discrete form of quantum* is essential not only to the coacervation of multiplicity (multiplicity which whether objective is said to be coexistent or else to be in space, and whether subjective is said to be in mind), but also to the distribution on the line of time.

The *form of numerableness of multiplicity* is essential as well to the coexistent, as to the successive data.

10. (d) The assertion by which the unity of Psyche be in every way excluding multiplicity, which should be only proper to the external world, does not hold.

What we take into account of an "*Idea*" as such, is only the rhythm, which is possessed in common by its particularities of every time and place, so that an idea appears to be as an indivisible unity transcending space and time, and not subdividing itself into the different points of them both. For this reason, not only the ideas of space and time themselves are thought to be out of any space and time, but the law which rules over things, is thought as being in a like condition, neither more nor less, *i.e.*, as always being identical to itself, and as always being the very same and only law everywhere and in every time.

But one particular subjective datum, which arises in the field of consciousness, together with another may appear either as a present datum close to the other present one, or as the successive datum of a preceding one, and close to it. Just as it happens with respect to the objective data, that are distinctly referable either to a space or to a time, so as to appear as being multiplex, *i.e.*, either coexisting into space, or successively distributed on the line of time.

The solidarity existing among the subjective particular data, and depending on the unity of the self (into which they come to emerge and where every one of them is by the self

apprehended as being quite distinct from every other) this solidarity by no means prevents the subjective particular data from appearing as being distinct one from another; so that it does not prevent the total apprehension of them from appearing as a multiplicity, just as it happens in the external nature. The essential unity of the external nature, by which one thing is existing on account of all the other existing and pre-existing things, by no means prevents any particularity of a particular datum from arising in the field of nature as a thing being quite different from all of the others; although every particularity keeps solidary with all the rest of nature.

The solidarity, which colleagues the cogitative cosmos, is not different from the solidarity which colleagues the rest of the cosmos, because the former cosmos belongs to the latter, and it cannot be also proper to the cogitative world what is proper to the greatest one.

Not a bit of it (Bergson would here reply). When several data are in mind together, they concert themselves either into an order or into a conceptual specification, so that by becoming that very single order or that very single speciality of conception, they can no more appear as being multiplicities and as being the ones apart from the others; were it so, Bergson would then continue, the same would also be true with regard to the external multiplicities that can no longer be estimated as being many, as far as they are thought together, *i.e.*, as either one order, or one single special datum.

To which we may reply that not even what exists outside the subject may be said to be a multiplicity: not five data may be said to be the root, the trunk, the branches, the leaves, the blossoms, but only the single datum of the tree in which they are set in their order: not a thousand soldiers are on drill in the camp, but only the simple unity of the battalion constituted by them, the bare unity of the universal cosmos and not the infinitely many things harmonized in it. And let the same be said of the spacial multiplicity, because in length, for instance, the lines sum up into the inch, the inches into the foot, the feet into the yard, and so on to the infinite length.

Should then Bergson here object that a certain succession of notes unifies into the speciality of a melody, which cannot be but its own unity, it would be easy to remark that in this case,

we have two very distinct facts; the fact of the several notes following each other between their intervals of time, and the fact of the agreeable effect produced by the rhythmical shaking of the physiological apparatus; two facts well distinguishable, the one from the other, and so well, that while the second appears to be a unity, the first appears to be a multiplicity. In the same way, if I put into a sack several thousand seeds of corn, and after having put the sack on a balance, I come to know the weight of it, I get the two facts of the multiplicity of the seeds, which I can sum up one after another, and the fact of the total of the compound weight shown by the balance, a weight which is that single weight without any distinction of parts.

And let it not be objected that in the mental datum, its compounds do not very often appear, and are not very often apprehensible: just the same happens both in the perception of the white light of the sun and in general in the conception of the abstract idea, and so on. Just the same should be said with regard to the material objects which appear to be simple, whereas chemistry (and only to some extent) has been able to demonstrate their being compound; just as psychology has been able (and only to some extent) to demonstrate that the apparently simple data of cogitation are, on the contrary, compound.

11. And we will insist upon the case of the melody, a case to which Bergson appeals in order to explain his own view on the subject. To do so, it would turn out profitable to an ulterior unfolding and confirmation of the deduction we set against him.

The very case itself of melody may be adduced against his assertion, because the specification resulting into a melody is dependent on time, and supposes it; for should the compounding notes coexist into space (*i.e.*, were they heard together) instead of succeeding through times they would give a different specification.

As we have already pointed out, when a musician has heard a melodic phrase, and when (by reason of the conscious resentment of that speciality of rhythmical consensus which takes place in his auditory apparatus and is depending on the reciprocal proportion of the motions of the several tunes) he has appreciated the phrase as being a melody, the same musician is

in the position on the one hand of recognizing one after another the various single notes determinative of that melodic sentiment, and on the other hand he can sign them on a piece of paper, giving through his signs the precise indication of the proper duration of each of them. In doing so, of course, he makes use of merely conventional representative signs; he uses the symbol of a quaver, which is different from that of a semi-quaver, meaning that two successive semi-quavers ought to last as long as a single quaver, *i.e.*, that while one of your fingers is pressing, one after another, two different keys of an organ, another finger must be kept still upon its own key. Therefore, we see that it is a possible thing to conceive intensity, *i.e.*, a unitary magnitude of duration, as being the sum of lesser durations, which may be thought to be parts of the same magnitude.

But in the symbolic indication, the durations are signed by means of spaces, and this makes Bergson believe that a duration (the abstract scheme of which he denies to be possessed by our mind) is asserted only through the introduction of spacial intervals between every data of a succession.

Duration by musicians is, indeed, represented by means of spaces, that is true; but space in this case is taken only as a symbol, just as it is the case when tunes are represented by means of written signs, which are but symbols, too, not being such graphic signs, by themselves, sounds at all. And space serves to symbolise time, by reason of the analogy existing between them, analogy which is dependent upon one of the fundamental laws of cogitation; the very same law which reveals itself solemnly in the making of language. Owing to the analogy between space and time, the successive data may be symbolized by those that are coexistent into space, just as we may symbolise the musical effect through the visive idea of colour. And *vice-versa* we may symbolise, still by reason of the same analogy, a pictorial effect by means of an acoustic idea of sound; in the same way we symbolise a spacial magnitude by that of a duration, when for instance we speak of a distance of an hour, or of a stone's throw, or of a few steps, and so on.

✓ 12. (e) And it is not true that Positivism ignores and does not admit the two psychological fundamental laws of the abbreviation and of the heterogeneity of purposes.

It is not true. Positivism, on the contrary, did know and profess these two laws, arriving at them not only before now, but also by itself and not through the teaching of any one.

On the law of abbreviation in cogitative working, I spoke briefly as far back as I published my first books ⁽¹⁾, with many details, and how such a law does result is clearly shown by me there, where I treat on it in my book on "*Truth*." ⁽²⁾ To prove what I am saying, it will suffice to transcribe here two pieces of the headings 8 and 15 of the Chapter XXII. of the same book.

"Without word, no science. To make the thing clear, let us come again for a little while to our example of numeration. After I have made up the sum of some given units, I either put some sign for it, or I say "*ten*." Whether the sign be either put, or seen, or thought of, and whether the word "*ten*" be thought of, or uttered, or written; in each of these cases sign and word are showing the operation that has been made; and they perform their office in such a way that their ideas suffice to afford me the knowledge which I am in want of, that is to say that the counted units are as many as are sufficient to compound the entity which they constitute, and which is called a decade. To afford me that knowledge, I say without obliging me to think anew, at the present moment and one after another distinctly the same unities. And so it happens that, by this sign and word, and by reason of their virtuality, I came to possess the means of being led, should I need it, to make a new the operation, which I have symbolised by them. The above-mentioned ideas of the sign and word are sufficient for the named purpose, not only for me, but also for whomsoever who knows the meaning of them. Just the same happens when, after having summed up ten decades, I say "*a hundred*"; and, when having summed up ten hundreds, I say "*one thousand*"; and when having summed up a thousand thousands, I say "*one million*."

"After this, what we have to prove about science will become easy and clear, namely, that with respect to it what we have remarked about Numeration and about the other analogous facts we have re-collected together with it holds good. As well for the species and genera of the descriptive

⁽¹⁾ Especially in that on "*Perception*," published in 1882.

⁽²⁾ Above all in headings XXII. and XXIII. The latter of them has this title: On abbreviated work.

sciences, as for the special and generic laws of dynamic sciences, as for the titles and under-groups and superior groups of the historical and statistical sciences, the likeness which colleagues the many underlying data, is to be found by beginning from the knowledge of every single datum so as to give thus place to the collation of their communities, collation which is found to be in them, and by which they come to associate one with another according either to their likeness, coexistence or successiveness. The association of many distinct data (*i.e.* their synthetical idea) is then marked and fixed by a word, which is apt to cause the re-appearance into the mind of the mentioned idea in its own virtuality, every time you may want to have it. Through having thus at our disposal words which represent associations having the same degree of generalisation, the mental work is in time made directly by means of these same associations by searching in each of them what they possess in common and by which they can associate together into a larger idea, which is then also fixed by a word. And so the mental work proceeds further on, just as we have said it is performed in the case of numeration. So that when a most general idea has been reached, and when it is countersigned and fixed by a word like our word "*million*" of numeration, we can through an inverse order, *i.e.*, deductively, proceed from this word to recall the words (and in an indistinct way their relative ideas) which represent the underlying generalities, and thus we can go further on till we come to those single data, from which the inductive or constructive work of science began. Therefore, if by reason of what we have said in the foregoing chapter there is no doubt that science consists in such process as this, our assertion, referring to its analogy to the fact of numeration and the necessity of word to gain science, is absolutely firmly grounded; just as the assertion that speech makes possible the scientific work by abbreviating it, and by doing so in the seven ways, which I point out in the next chapter, XXIII., stands firm."

And with the law of the heterogeneity of purposes (as they call it) I have dealt many a time, too, in my books, and also treated professedly on it in that book on "*Perception*," which has been quoted many times in these pages, a book where you can read, for instance, the following passage: ⁽¹⁾ "As a material

⁽¹⁾ Part III., Paragraph XX.

thing produces a certain effect upon the aesthetic taste of an artist, likewise it may happen to a merely mental representation. An artist, to whose fancy a representation that causes a disgusting effect upon his aesthetic taste has occurred, tries to get rid of it, just as the tongue does when it tries to get rid of disgusting food. And the contrary happens in the inverse case. An aesthetically agreeable fancy is cultivated, just as food which pleases one's tongue is turned about in one's mouth. When an artist has an agreeable fancy, many things may happen. The fancy can be found to be aesthetically defective in some parts of it, and the defect gives way to the convenient integration, thanks to the recalling of the opportune aesthetic conceptions, which are already possessed by the artist in consequence of his education in art. In doing which the artist does as the cook when, after having prepared some food, he tastes it, and, on finding it to be good but a little insipid, adds a little salt to it. Fancy may be found to be indistinct here and there, and this produces its integration in a way which is analogous to the above-mentioned one, and by means of the completing opportune parts. By doing so, the artist does as the photographer when he adds, by the work of the brush, the unexpressed strokes on the photographic picture. May fancy at last be found agreeable to the aesthetic taste only in part; and this causes the substitution of beautiful details in the place of those that are not such, which may afterwards lead also to a total reform of the primitive fancy by reason of the newly found parts, that may in their turn suggest the recall of some more suitable ones and the elimination of those, too, by which the former has been recalled. And so the mental work may renovate again several times, and till the result be an adequate representation to the demand of the taste of the artist, who hungers after his own aesthetic satisfaction, in which case it happens to the artist, just like it happens in the process of improvement of a mechanical motor, that having been shaped in a certain manner, comes at last, and through successive reforms, to acquire a quite different form from that which the first inventor had given it."

And by all this I have meant to show a particular case of the natural making according to that same cosmic universal law, on which I treat directly from the Paragraph X. to the

XVIII of the fourth observation of my book on "*The Natural Making*"; in them, to the question on where we might observe its working, I conclude as follows: ⁽¹⁾ "Everywhere, according to the same law and with the same facility, as well in the fleeting thought of a man as in the universe, as well in the tender germ of an oak leaf as in the cosmic system, as well in the microscopic crystal of snow as in the whole of the solar system."

III.

1. And it is said at last: "*The Positivist, by attributing to the psychical fact any more than the pure representativeness, does not perceive that the latter is essentially united to Sentiment and Will, in both of which, generally speaking, stands the reason of psychical phenomenon, and speaking in a particular way, the reason of the ethical one. That free spontaneity in view of an end, which is peculiar to the psychical phenomenon, cannot, consequently, be admitted by the positivist, because he proceeds from the inadmissible preconception, that the above-mentioned phenomenon be entirely depending upon the physical one.*"

It is false that to psychical facts, the Positivist attributes only representativity and that he is unable either to see the connection with Representativity Sentiment and Will, which there is in those facts, or to admit the dependence of the psychical and ethical phenomenon on this connection.

Clumsily false. Just quite the reverse is the psychological ground on which all the now many books of mine rest, no one excepted. And on this point the doctrine, for instance, I teach in them on the "*impulsiveness of idea*" is notorious. And how many more things on the subject has Positivism been able to teach, and how much better than our opponents had ever been able to do!

How funny, indeed! While on the relation existing among Representativeness, Sentiment, and Will, Positivism offers a theory, which may serve to complete and to better the theory of its opponents; the same opponents lay against it the charge of not admitting its own theory!

⁽¹⁾ Phil. Works, Vol. II., p. 286.

2. About the dependence of the ethical phenomenon on the above mentioned relation, I have sufficiently discoursed in the writing published by the *Rivista di Filosofia e Scienze Affini* ⁽¹⁾ under the title "*The Novel Philosophy of Values*," and I leave to it what has to do with this subject.

We have now to add some considerations on the psychical phenomenon taken in general.

About this topic, our opponents fix some essential points that agree with the doctrines I profess in all my books, and that in consequence appear to belong to Positivism before they were belonging to the doctrine of our opponents. These points are the subjective fact of sensation (what I call "Perceptive Integration"), the logical principles; the initial and indifferentiated representation preceding the psychological dilemma ⁽²⁾; the form by which the object is apprehended, as being anything else but the form of the subject of feeling itself into itself.

But however, what an imperfect and erroneous, not to say absurd, use they make of these principles!

In a word, in the place of an incompetent Positivism, our opponents wanted to substitute that Modern Idealism they intend to represent, but, on the contrary, when they speak rightly, they do nothing but say what Positivism has already taught; and when neglecting what it has further on taught, they draw science back from the point to which Positivism has forwarded it.

3. And let us see it.

As it is above reminded ⁽³⁾, I have many a time expressed myself about the absolute cognoscitive value pertaining to sensation. "Sensation consists in the consciousness of having it and hence in the absolutely necessary affirmation of its own being for itself and independently from anything else. Our opponents, though remembering that the same thing is professed by pragmatists, yet deny the evident truth of it by remarking that the affirmation to be valid must rest on a referment of it to a logical principle; but they fail to say *on which principle* and how it might be apt to justify the same affirmation since they

⁽¹⁾ In the Number of October-December, 1907.

⁽²⁾ Upon the meaning of this term as it is intended by me, see my writing upon "The Quadruple Problem of the Theory of Knowledge" in *Phil. Works*, Vol. X., p. 215 and foll.

⁽³⁾ I., 3 c.

do not think the simple arising of a sensation in the field of consciousness to be sufficient for such a purpose; and upon the whole remaining in a perplexity, that induces the shadow of scepticism also upon the very primitive subjective datum.

Logical principles, by our opponents, are not only appointed to act a very great and principal office in the psychical phenomenon; but they are also considered to be the reason of every form of being and doing. Though they do not by this affirm anything that would not be known before the coming of Modern Idealism, our opponents are certainly right in thinking so; but they are in the wrong by their not being able to tell us what these principles are in themselves, and where they come from, and why they can guarantee their being themselves, and by themselves, the reason of every being and doing. By their referring, without any foundation, to the logical principles (which they gloomily call "*What is thinkable*" and "*not sensible*" and "*not transcendental*") our opponents still remain on the ground of scepticism, without perceiving that Positivism has found out the above named foundation; that it has already taught what are the logical principles, and how they make themselves; and why they can guarantee as well what is already in existence, as what is becoming into it; by demonstrating that, after all analysis, they only consist in sensations, that organise themselves into cogitative rhythms; which rhythms are true, because, in the end, they are but the very rhythms of that very experience by which they are produced.

4. Our opponents are in the right as well when thinking the representation to be at first indifferenced, and afterwards bisected into the two contrary representations of Self and Not-Self. But what the process of dimidiation consists in, they cannot tell; so that the usual scepticism also here remains as regards the external representations. Positivism could get them out of it if, instead of slandering this doctrine by misconceiving the services, it has rendered independently from their boasted Modern Idealism, they would only try to know it such as it really is. As I lately explained, epitomizing my theories in my recent writing against immanentism, empiriocriticism and solipsism under the title "*The Quadruple Problem of the Theory of Knowledge*" ⁽¹⁾, the process, leading to bisection, is

⁽¹⁾ Phil. Works, Vol. X., p. 203 and foll.

that of the "*experiment*" adjoined to the simple "*observation*"; the experiment by which the mass of the external sensations comes to distinguish itself from the mass of the internal ones and to appear as being opposite to it in such a way that while we find to be in the former mass the external entity, *i.e.*, the heterosynthesis (*i.e.*, the Object) we find to be in the latter mass the internal entity, *i.e.*, the autosynthesis (*i.e.*, the Subject or the Self). That very Self which to our opponents remains a mystery, an accommodating mystery to which they can attribute their enigmatical production of the logical principles; and by which they have no hand in troubling the feelings of those people that are still jealous of the relics of the metaphysical atavism.

5. And our opponents speak rightly, at last, when professing the form by which we apprehend the object to be but the very form by which the subject feels itself in itself. But being led out of the way by the doctrine, according to which quiddity is a distinguishing trait of cogitation and quantum of the object (a doctrine we have in this writing already demonstrated to be false), they come to contradict themselves in the most evident way, because they end by maintaining, that knowledge comes to be objective by getting rid of the qualitative impressions of intuition. To gain the knowledge of the exterior world, I have at my disposal nothing else but the quiddity of intuition and I get rid of it; and where from then does the quantum of the object spring out? And where from does its representativeness, which has been previously said to be only afforded by the form of the subject of feeling itself in itself spring out? And, on this occasion too, Positivism could have been able to instruct them! In the objective representation, there is found to be the quantum, because it is previously found to be in the subjective one. In the objective representation the subjective quiddity disappears only apparently, and this happens on account of the abstractive process, which, if it is taking away some of the characteristic properties of representation, does not at the same time however, suppress the whole of them, but it leaves some; and these, although weakened, yet keep still qualitative as are all the others.

How candid (besides being incongruous with their principles) is indeed the illusion of our Idealists! The physicist

objectifies the luminousness by putting out of the subject nothing else but the ethereal fluid and its vibrations; the object of the mathematician is the pure space, the pure time, the pure motion, and so on. But after all these very abstract representations of the physicist and mathematician, are themselves supplied by the very material of the sensations of the subject, a material that is always a qualitative one too.

Not to mention that the object of science is not necessarily confined within the bounds of the above named abstractions, since physics, for instance, considers apart one from another the data of gravity, light, heat, electricity, and magnetism; and biology the data of the living organisms; and sociology the datum of the human society; and so on.

There is some more than this to be added. As our opponents have (not before Positivists, however) acknowledged, the psychical fact essentially consists in Sentiment (affective and volitive) and Representation. Although this be true, it does not follow that the psychical fact should entirely lose its own sentimental aspect, when we get through it, the knowledge of the exterior world. The contrary is just the truth, a truth that our opponents who have not yet got an adequate idea of the connection existing in psychical phenomenon between Representation and Sentiment, have never suspected; who keep on considering them in the same manner in which they both were considered by the old philosophy, *i.e.*, as if Representation and Sentiment were two coupled products of two different faculties, while they are, on the contrary, two indivisible aspects of a single product.

As I said in the writing above quoted on "*The Novel Philosophy of Values* (¹)" (when recapitulating in it a doctrine that I have always professed) "the representativeness of the psychical fact is that one very speciality itself of the sentiment in which it consists. And by making use of this speciality in the objective representations, its sentimental aspect is yet preserved in this sense, that, although it is not considered to be the effect caused by the object in the subject, nevertheless it is considered as being, as for the object, the productive entity of the object itself. Sugar for the knower is that external sweetness (or cause) that produces that internal sweetness (or effect). And

(¹) Number 11.

let the same be said about the whole of the representations should you want to analyze them one after another; should they be even reduced to the utmost of their abstractness."

6. But on the same topic of the psychical phenomenon taken in general, our opponents offer some other doctrines, and quite discordant from those of Positivism, and which do not absolutely hold. So that, while aiming at correcting our doctrine, they end by drawing the psychological science back from that point to which Positivism had lifted it.

Some other doctrines, I say, being discordant from those of Positivism, namely, that the psychical phenomenon is not altogether depending on physical phenomenon, and that they both differ from each other, by reason of the free spontaneity (*i.e.*, the free attitude to evolve itself not fatally, but in view of an end to be selected in an arbitrary way) which is peculiar to the former.

These doctrines are founded: *Firstly*: On the transcendency existing between the psychical and the physical fact. *Secondly*: On the qualitative nature of the former and the opposite quantitative nature of the latter. *Thirdly*: On the indifference of the physical energy towards the specific diversities of the psychical emergences. *Fourthly*: On the insufficiency of the material elements which are few in comparison to the illimited conscious productions. *Fifthly*: On the causation determined by a purpose being quite different from that which is merely a mechanical one.

7. By making an argument out of the transcendency between the psychical and the physical datum, our opponents not only rely upon that science by which Descartes asserted that the extent of matter could not have any influence over the inextension of thought and *vice-versa*, but also they forget what they yet profess; that is to say that the extension does not afford the metaphysical essence of what we call the body because it too is nothing but a thought of ours, just is such whatsoever other appearance, be it only a subjective one.

This being granted, it descends from it that what exists shows itself under different forms, according to the different sorts of sensations through which it is apprehended; so as to be said an extent, when representing itself through an external sensation of such a form; while when apprehended through a

sensation that be not of such a form, it is said to be an inextension; although it be always a matter of the very same being. Just in that very manner by which a body is considered to be just the same thing that through the touch appears to be (either in stillness or in motion) an extent; through the sight, a colour; through the hearing, a sound; through the smelling, an odour; through the taste, a flavour. And, likewise, to the body, which keeps remaining the same one, we will similarly attribute, together with the different sensations we can get out of it, the variations having rise in it; and this very varying will be understood as corresponding to the interior varying of the being, which we apprehended as the same body; to this varying which will be then considered the ratio of the experienced variation itself.

To this, however, they lay two objections: The first: that, by reasoning in this way, we start from a metaphysical preconceit. The second: that the psychical phenomenon belongs to an order of being which does not identify itself with the material one, although the former be always accompanied by the latter.

To eliminate the first objection I will repeat here what I have written on another occasion ⁽¹⁾: "Knowledge is gained by means of particular sensations. These sensations are not only singly specialized into each one of their acts, but are also similar one to another by different degrees. The likeness is greater among those, that from being afforded by the various organs of sense, appear to be classified into as many groups as are in number their same organs. The likeness is only great among those, that from having been produced, on the one side, by the external organs, present the character of materiality; and those that, from having been produced, on the other side, by the internal organs, present the character of immateriality. The likeness, at last, is less among the universal mass of all the sensations, because the likeness, in this case, only is dependent on the fact of their being all of them an affirmation of Being, an affirmation so much essential to a sensation, that to think of it as being improvident of affirmation, would be absolutely absurd.

⁽¹⁾ In my writing under the title "*Metaphysical Monism and Scientific Monism*," Phil. Works, Vol. IX., pp. 450-453.

To the likeness depending on the arising of sensations from the various organs of senses, follows the affirmation of the likeness, which is to be referred to all sensations that are arisen by any one of such organs. To the likeness dependent on their externality or interiority, follows the affirmation, on the one side, of the material entity, and of the psychical entity on the other. To the likeness depending on their being sensations all of them, follows the sole and universal affirmation of the Being (ro'oë); and behold the monistic, scientific, positive and not at all metaphysical conception to which we were to arrive!

"*That which exists*" we said but existent in its own intuitively perceptive conception, that is pregnant of every reality, and not in the reflexively reduced conception of the bare note possessed in common by sensations; a note having been considered apart from every specification of reality.

And hence, *that which exists* in a concrete manner, *i.e.*, the maximum among the Indistinct, into which all the possible Distincts are gathered; as well those which have already arisen; as those, which did not and are still unknown; but not that abstraction which is mentally distinguished out of the generical idea of being; that abstraction, which is said to be the supreme of the purely subjective forms.

And, hence, that which is persistent in subsisting and incessant in operating. A present datum whose ratio is found to be in its own past, a datum which is, in the same time, the reason of every future. The whole which is subsisting as being a universal only substratum lying under an infinity of coexistences and successions, which are as well correlative among them as in a different way, expressive of the essence of it; either as being a substance or as being a force say; lying into every thing and every fact. The whole, that shows itself in the psychical effects, in which effects, in a corresponding manner, the formations both of the heterosynthesis (or of the Matter) and of the autosynthesis (or of the Psyche) come to emerge.

The data of heterosynthesis and the autosynthesis are true indications of this essence and not at all mere symbols . . . Quantity, to the Mathematician that is calculating it, is not a metaphysical datum (*i.e.*, a transcendent entity by itself), but it is a simple relative of what we think and mean when saying *that which exists*. Let the same be said as respects the Somatic pheno-

menon of the Physicist, the stochiologial one of the Chemist, the vital one of the Biologist. Therefore they do not work on the supposition of a metaphysical datum, but they assume a scientific one, *i.e.*, supplied by the observation and by the experiment of fact. And when they are referring thus to their own substratum of matter and force, their referment is still a scientific one; because to these data of fact of the heterosynthesis, we find to be connected, according to experience, either the quantitative, or the stochiologial, or the vital datum. In like manner are scientific as well as the autosynthesis and the heterosynthesis of the philosopher; because they are supplied by the observation of the fact of Psyche; and scientific is also his referment of autosynthesis and heterosynthesis to that only substratum that is thought and meant as being *that which is existent*; because the two syntheses are found to be in connection, according to the exigence of experience, with this common concrete Being.

Metaphysical (and, scientifically, not able to be supported) are, on the contrary, all the monistic data of Materialism, Idealism, Pampsychism, Here-after, Noumenon, Unknowable, because of their being considered as transcendental entities by themselves; whereas they are, instead, nothing else, but as many distinguishable moments of that scientific and knowable datum of which we have spoken, *i.e.*, of what is thought and meant as being *that which exists*. The Matter of the Materialist, in fact, is only the moment caught out of the heterosynthesis; the Mentality of Idealists, is only the moment caught out of the autosynthesis; the physiopsychical Atom of Pampsychists is only the absurdity of the identification of those two moments which, as such, are in opposition one to the other; the Here-after of Littré, the Noumenon of Kant, the Unknowable of Spencer, are nothing, but that Indistinct which is found to be in the conception of what is thought and meant as being *that which exists*; of this indefinitely distinguishable Indistinct which, while keeping itself not distinct, does not turn out to be the unknowable, but only the unknown."

9. And let us come to the second objection, by which, while they admit that materiality is infallibly underlying psychically they do not yet admit that psychical and physical phenomenonism be coincident between them by reason of that substratum, which is common to them.

Our opponents lay before us this second objection supporting it by means of that "*Philosophy of Contingency*," which, having been firstly introduced by a book⁽¹⁾ of Emilius Boutroux, is now the fashion of the day.

Says Boutroux: "In the universe there are to be distinguished several worlds forming several *planes laid one over another*⁽²⁾; at the bottom, there is the world of *Possibilities* and, over it, the *Being*⁽³⁾; over this the *Matter*⁽⁴⁾, and over it the *Bodies*⁽⁵⁾; over these the *Living Beings*⁽⁶⁾; over which, at last, on the apex of the whole is throned the *Mind*⁽⁷⁾.—Every form of the Being is the preparation of a superior form⁽⁸⁾: that is to say, that the beings afford each other mutual support; the inferior ones being existent not only for themselves, but, also in order to afford to the superior ones the conditions of their existence and improvement; these in their turn, in order to lift the inferior ones to a level of perfection, that it would be to them impossible to reach by themselves⁽⁹⁾. But the inferior beings are not apt to transform themselves into the superior ones; because if these⁽¹⁰⁾ find into those their own stuff, they do not, however, find these their own forms⁽¹¹⁾. Hence the existence of the superior degrees of the being, is not necessitated by the existence of the inferior ones⁽¹²⁾ but it is an epigenesis⁽¹³⁾ determinated by a free creative action⁽¹⁴⁾; hence the contingency of the epigenesis itself⁽¹⁵⁾, and creator of the essence and of the existence is God⁽¹⁶⁾ a perfect, necessary and free being⁽¹⁷⁾.

10. I never failed to wonder at the possibility of conceiving, at the end of the nineteenth century, an ill-timed theory of creation like this; and still more I am surprised at realizing that such a theory can find followers in the twentieth century, too.

According to this theory, while in the world the essences are found to be irreducibly dissimilar and not yielding one out of the other and only laid the one over another; in God (wherein

⁽¹⁾ "*De la contingence des lois de la nature*." I make use of the V. Edition, Paris, 1905.

⁽²⁾ p. 132.	⁽⁶⁾ p. 76.	⁽¹⁰⁾ p. 138.	⁽¹⁴⁾ p. 157.
⁽³⁾ p. 15.	⁽⁷⁾ p. 98.	⁽¹¹⁾ p. 133.	⁽¹⁵⁾ p. 157.
⁽⁴⁾ p. 43.	⁽⁸⁾ p. 142.	⁽¹²⁾ p. 133.	⁽¹⁶⁾ p. 157.
⁽⁵⁾ p. 62.	⁽⁹⁾ p. 143.	⁽¹³⁾ p. 133.	⁽¹⁷⁾ p. 156.

they must be, since it is said by our opponents that they come from Him) these essences ought to unify by themselves, so as to constitute the absolutely only essence of God; and it must be necessarily so; otherwise they ought to suppose a being that were superior to God; a being making, in God, that same contingent unification that is said by them to be made by Him in the world; and after having supposed such a being, they ought to do so for another that should make the same unification in this same mentioned superior being; and, after, to do the same for another again, and so infinitely on without any possibility, therefore, of a real existence for such a being.

In consequence, it is admitted that, in general, the essences above-mentioned can by themselves unify into the absolutely only essence of a single being. And why not then into the world itself directly?

Ah! the scientific atavism! Always the same! Making out of a mere mental abstraction a concrete metaphysical entity! Opium is a body, and as such it has nothing but the properties of a body, heavy, extended, shaped. And how, then, one asks, does it happen that it makes you sleep? It is easily explained. Think of that reality, which is called the soporiferous power; place it over the same body, and, behold, all is made clear! It is not the body of opium that causes one to fall asleep, but the slumberous power that has been placed into it and kept there!

And, now, a question comes to the point; by what reason has not *Boutroux*, who employs a certain number of generalities, in order to make out of them as many essences, being irreducible one into another (possibility, being, matter, body, life, thought), does not do the same with all the species since these, too, are irreducible one into another like the genera are?

Much more logical was Aristotle, who supposed so many metaphysical entities (his "*Forms*") as are in number the species themselves; and still more coherent was Plato, who supposed an entity for every artificial species, too; such as would be for us, a pipe and a toothpick.

II. And what should we say, since the same general entities, instead of being opposed to each other, are nothing but creations of the very thought that posits itself as being the only same essence for all of them?

And what should we say, since, in consequence of the distinguishing themselves objectively of the beings, according to infinitesimal degrees, as well as on the line of space (as having already become) as on that of time (as becoming) it is absolutely impossible to determine the bounds within which they cease to be a certain being and begin to be another?

And what can we say since anything whatever is what it is only by power of that same whole, which is that Indistinct wherein the thing is found to be one Distinct of it? Of that same whole that reflects itself into every being and wherein every being is found to be reflected? So that at last the genera set in a row, like overlaid essences, do not turn to be anything but infinitesimal gradations of distinctions that follow one another into the infinitely incessant virtuality of the sole concreteness of the Indistinct that underlies the whole?

And we can see it in the fact of the psychical phenomenon which, for us, is here, the fact that matters more. But, in order to speak briefly about an argument that would require a book to be conveniently treated, and confining myself to only suggest to those who are willing to guess the much that is missing for the completion, I will here quote the beginning of my *Introduction* to the writing on "*The Making and Dynamics of Psyche*." (1) "Out of the egg the animal is developed in all its organs and in all its functions; just as, out of the seed, the vegetable is developed in all that constitutes and makes it. As the heat of the sun, by communicating itself to a mass of wax, softens it, and, on the contrary, by doing the same to a mass of mud, hardens it; and, in general, as the force of the surrounding nature determines different effects, according to the difference of the thing to which it applies itself, in the same way, this very force, by operating upon the seed of the vegetable, determines the making of the phytological organism that comes out of it; and, by operating upon the egg of the animal, determines the making of the zoological organism that comes out of it; and, by operating upon the egg of a given species, it determines the making of the zoological organism of that very species and not of any other. The various formations gained by this way, therefore, do not represent directly, what is in itself the natural force, that operates to determine them; but

(1) *Phil. Works*, Vol. IX., pp. 127-129.

only the peculiarity of the product of its action upon the thing to which it was applied, of this product, that, as such, is not to be met anywhere but in this very same thing."

"The natural making by effecting itself in the said manner, comes to have in itself, what is required for its own existence and action; to have it, in that very form, which is characteristic of its own species; and so exactly characteristic, that (as it is easily understood, because, once given the cause, we must necessarily have the effect) the teleologists think that the precedences are wanted and predisposed on purpose in view of an issue, which they think to be a predetermined purpose. As we have said, the natural making comes to have in itself, what is required, not only for its existence and action, but also in the characteristic form of its species. The vegetable, for instance, in making itself, succeeds in getting its roots with which it can fix itself strongly to the ground and derive the substances which are afforded to it by the earth; and it comes to have the leaves that flutter in the air and in the sun; whereby, and by the working of light, it can as well imbibe itself with the nourishment of carbon as to succeed in getting the blossom and, after it, the fruit, by which it can propagate itself."—"The development, of which the egg is capable, confers on it much more extended and elevated attitudes, that is to say not only the attitudes which are analogous to those of the vegetable of nourishing and propagating itself, but also those of moving from place to place; of meeting in ever varied connections with the surrounding things, and of acting at will upon them; in short, what is called the life of relation. And the development, whereof the egg is capable, can confer on the animal these more extended and more elevated attitudes, because the same development succeeds in producing in the animal not only the apparatus of nutrition and propagation analogous to those of the vegetables; but also the apparatus for the above mentioned functions of relation, that are thus proper only to the animality; i.e., the apparatus of physiological and psychological functioning; or, in a word, the apparatus of Psyche. And also in this case, with such an exact correspondence between cause and effect, that the teleologist imagines Psyche as having been on purpose infused in view of the special purposes previously spoken of; and as being an addition to all the rest and a

mere superposition to it; an added and superposed Psyche; whilst on the contrary it actually developes, according to a natural necessity, out of the egg; just as it happens to the bowels; so that, in the same manner that we say of the animal, that it digests, because its bowels have developed in it, we must equally say, that the animal feels and moves at will because the Psyche has developed in it."

The Psyche, a creation being apart from the organism and superposed to it in a contingent way? Nonsense! The peculiarities of sensations are determinated by the peculiarities anatomico-physiological of the organs of sense just as they have turned out through their own material making. The sensations are as many, not one more, not one less, as are the stimulations upon the senses coming from all that which is around them in nature; from all that which has acted as a stimulus on them; i.e., our sensations are the exact reflex of that point of the universal being, which is coincident with the organs of senses; and the combinations of sensations, according to what is required by the nervous and cerebral woof. And in thought nothing else but this, combinations of sensations. And in them all their *quiddity* and all their *quantum*. And then, now what else can rest, besides sensations and combinations of them, which might be called the separate substance of soul or mind? Which might operate apart independently from every other thing and in a manner that belongs only to it?

12. *That which is existing* we said above in number 8, on quoting a passage of a precedent writing of mine. *That which is existing* in a concrete manner; that is to say, the maximum of all the Indistincts and of objectiveness; that same maximum wherein all the possible Distincts are gathered. That which, therefore, is persistent in subsisting and incessant in operating. A present datum whose past is its reason and ratio; a present datum that is the reason and ratio of every future as well. That whole, which, as being the universal and only substratum, is subsisting in an infinity of coexistences and successions, that are correlative between them and, in different ways, expressive of the essence of that same whole; as a substance and as a force, that is, in every thing and in every fact, and which is showing itself in the psychical effects among which, and in a correspondent ratio, emerge the forms of heterosynthesis, or of Matter, and of autosynthesis, or of Psyche.

No, we are told here, because the essences, that are conglobated in that Indistinct, and the virtualities included in them are not known; so that it is not possible to deduce from them either the necessity of their unity in *That-Which-is-Existing*, or the necessity of the multiform productions, that are to be observed in it. The reasoning is mathematically exact. We do not know this essence and we cannot therefore establish, on the base of the knowledge of it, the affirmation of the same necessity; but if we cannot conclude owing to the lack of that knowledge to that affirmation, we cannot, as well however, conclude to the negation of it. There is no way of pleading an exception against this remark which is, by itself, sufficient to cause the whole of the philosophy of contingency to end in smoke.

✓✓ But, nevertheless, I am told, you do admit that necessity, and how can you now do so since you say that it is not possible? In doing so, we conform to causality not metaphysically, but experimentally taken, *i.e.*, taken with that degree of probability that can be attributed to do it, as I have explained in my former writing on "*The Three Critical Moments of the History of the Theory of Knowledge in Modern Philosophy*," already quoted above. If meant in such a sense, causality does not afford an apodictical certainty; it, none the less, guarantees that same certainty which we have in natural sciences. And what can we want more? It is enough that the naturalists will not reproach philosophy for its not possessing that certainty which they can dispose of; and we laugh at the metaphysicians who, wishing to have it greater, end by having none. If, on putting a dry handkerchief into the water, we see it getting wet, we say, like naturalists do, that the cause of the effect of the wetting lies in the water touching the handkerchief. And this is enough for us. We are not saying, like the philosophers of contingency do, that water wets the linen on this occasion, because it pleased God that it would happen so; he being able to command, on another occasion, that water should no longer wet it.

13. About the impossibility of depending the psychical fact on the physical one, because, as it is said, the first is quantitative and the second qualitative, it is needless, in order to

show the inaptitude of this reason, to speak on any longer after what has been remarked above in Number 5.

We will stop a while, instead, on the other two reasons produced by our opposers. The reason of the indifference of the physical energy opposite to the specific psychical diversities; and the reason of the littleness of the material elements with respect to the immensely numerous conscious products.

And we will notice first, that the Idealists, by opposing here the psychical to the physical energy, not only come again to make use of the old metaphysical conception, but also to conceal what they have not the courage to declare clearly, *i.e.*, the dualism of the metaphysical substance of the soul on one side, and of the metaphysical substance of the matter on the other. By which we come to justify what we were saying at the beginning, *i.e.*, that our opponents are offering as being the last result of science, that which, after all analysis, and though studiously concealed, is nothing but the very old metaphysical spiritualism itself.

And, coming back to the two above mentioned reasonings: As to the first, in order to show that it has no worth at all, it will suffice to remark that if it forms an efficacious argumentation against materialism (for this doctrine identifies the psychical with the physical phenomenon) it is not efficacious in respect to Positivism; which in the physical phenomenon correlative to the psychical one, does not see anything but the indication given by the external sense of the working reality; and being the external sense transcendental, in respect to the internal one, the former cannot coincide with the speciality of the latter.

Besides that, we can here notice that the same physical energy is already a multiplicity of energies which are differentiating; since the physicist, for instance, distinguishes among gravity, heat, light, electricity, magnetism; the chemist, among the specific properties of the various substances; and, likewise, the mineralogist among the different crystalline forms; and the physiologist among the various products yielded by plants and animals.

Should it be said that, after all, these diversities of energy may be imagined as being nothing but differentiated rhythms of the motion itself, to this we might again oppose that an

analogous reduction may be effectuated also with respect to the diversities of psychical forms; which, too, can be imagined as being nothing but differentiated rhythms of the simple protoestematical minimi, as I have demonstrated in several passages of my writings (¹).

Of this infinite multiplication of the causative phenomenality through the diversifying of the rhythm of similar elements, an account is also to be kept, in order to answer the second of the two above mentioned reasons. Infinite, are as well the compounding minimi, as the rhythms resulting in the psychical phenomenism; but infinite are, likewise, the compounding minimi and the resulting rhythms of the physical phenomenism. Who does not know of the endless number, pointed out by the naturalist, of the prime elements and of the moments of their action and of the forms of things and acts which can be gained through their various rhythmicalnesses?

It is, then, a curious thing that the difficulty regarding the above two mentioned reasons be, by our opponents, used not in view of the simple sensations, but above all of the logical schemes and of the affective forms as well; while the disformity should be absolute, neither more nor less, as well for the former as for the latter. The thing is, that our opponents did not reach the doctrine, yet so certain and sure, according to which the logical schemes are nothing but the simple rhythms of the same sensations; and sentiment, afar from not being a sensation, is but an only thing with it, as we have explained above. All of which comes to show again, that our opponents, as we have already noticed, while they are professing to think that sentiment is always accompanied by sensation, nevertheless they end by making, of the one and the other, two quite different functions.

And how can we think differently, since, between knowledge, sentiment and will, they explicitly put an *irreducible fundamental difference*, while, on the contrary, the fact is that the representation caused by the occurred integrations, is found to be differently referring in the mental complexus; so that there is no way of observing in it a diversity of essence, but simply a *diversity of referment*?

(¹) Especially Phil. Works, Vol. I. 423-429; and Vol. VII., 34, 62, 80, 401, 508, etc.

Above, in number 5, we spoke about this subject with regard to the distinction between representation and sentiment in general. We will here talk again about it in regard to Will. "The reiterated observation of the fact that the volitional sensation is followed by the acts relative to it, is the cause by which the same sensation may be thought as being in casual relation to the same acts, and by which it may be consequently thought that the volitional sensation had a causative efficacy which does not, instead, belong at all to it, and is only connected with it by reason of the above mentioned association. (¹) In the consciousness of human will there are three different elements to be discriminated. They are: the speciality of the sentiment experienced during the act of willing; the idea of the willing Self; and the idea of the operative efficacy of volition. Now, it is easy to see, that what is essential in volition is only the first element, *i.e.*, the specific sensation, which arises in the region of consciousness on account of what is common to all sensations, the excitement of the sensitive organ. The other two elements are a pure effect of mental association. They are found to be in consciousness only after the same association has taken its place in it never before, and never when the same association does not succeed in forming itself (²). Elsewhere (³) I explain the matter by an example, which I think it convenient to report here. "A pole is a pole, and nothing but a pole; but if I plant it in a certain spot to show the way that is to be followed, I invest it, on the circumstances of this case, with the character of *indicator*. If I make use of it to bear a weight, I invest it with the character of *beaver*. If I put it across a lane, I invest it with the character of *barrier*. If I make use of it to beat walnuts down from their tree, I invest it with the character of *beater*. If I make it serve to hold a bundle on my shoulder, I invest it with the character of *holder*."

14. Let us come now, at last, to that final difficulty which has been brought forward of the causation by reason of a purpose; causation which be therefore free in Psyche, and hence quite different from the mechanical one of the mechanicity which therefore is said to be necessitated.

(¹) I. c. Chap. XXIII.

(²) I. c., Chap. XXVIII.

(³) Phil. Works, Vol. IX., pp. 265, 266.

When the necessary connection between physical and psychical phenomenon is demonstrated, and when the absolute determinism for materiality is admitted, the necessary consequence is that determinism must be admitted also in respect to the psychical phenomenon.

The reason to support the psychical indeterminism, which is grounded on the variety, multiplicity, and unforeseeableness of its products were it of worth, would also be so with regard to the physical phenomenon wherein, too (and not, to be sure, in a less proportion), the same variety, multiplicity, and unforeseeableness is to be realised. When, where, how much, how will it rain on a certain country, and with what number and weight and shape of water drops? Although the cause of each one of these physical particularities be not appointable, determinism is however, nevertheless, not to be excluded. And why are they not willing to deduce it in the analogous case of Psyche? Here, too, when you succeed in distinguishing the same cause, the somatic determinant of the phenomenon is always found to exist. And in how many ways, were this one excluded, determinism may be attested. Variety, yes; but always with the character of the same species of acts and of the same genus of conditions as of age, of ethnography, of the historical period, of the medium, wherein the animal lives, of the physiological condition through whose different genera we get the relative genera of psychical manifestations, and so on. And determinism may be much better attested by considering that in every psychical production you can never find anything else but a plot of sensitive elements that have been all of them absolutely determined by the anatomical ratio of those organs through which we got them; in such a way that the different conformation of the organs of senses of the different animals bears different psychical attitudes, in the same way that the presence of this or of that element in a certain substance gives it either such or such other properties.

The fact of the sentiment of the independence of will from any determinative precedence, does not suffice to establish psychical indeterminism. As I once wrote ⁽¹⁾: "Consciousness

⁽¹⁾ In the book on The Ethic of Positivists (Phil. Works, Vol. III.), Book I., Part II., Chap. IV., No. 2.

shows me the only fact of deliberation of will, and does not show me any precedent other fact that be the cause of the same volition, i.e., consciousness does not let me know that Will depends on something that determines it. It does not do so. But, however, it does not equally teach me that volition has not such a relation of dependence, while to know this is just what should be exactly necessary in order that the argument might have a value. With our hand we throw a stone; this stone makes a curve moving in the air; and this is the effect of the impulse received from my hand. Let us now suppose the stone to be supplied with the consciousness of itself, but only within the time during which (and not before) it is moving in the air. The stone would believe that it moves by itself, because it is not aware of the precedent fact of the received impulse. But it would be mistaken."

And I do not dwell any longer upon this subject, leaving it to what I wrote many other times on it and, above all, in my recent writing under the title "*Reflected Act and Voluntary Act*" ⁽¹⁾. In this writing, where I demonstrate also the fallaciousness of the doctrine whereof our opponents are so fond, the doctrine of teleologism as being characteristic of the psychical functioning and the surer index of its liberty by remarking that in such a functioning nothing else happens, but what takes place in the physical phenomenon too, and according to the same law of the heterogeneity of purposes, as it is called erroneously, considered, as we have already said, as being exclusive of the psychological working. I leave all this to that writing, it being useless to insist upon a subject that has been there already sufficiently illustrated.

Now we can, therefore, conclude that the charge set against Positivism by our opponents, that is to say, that in it there is found to be the *fundamental fault of the subject appearing as being an object*, is entirely false.

Not even the shadow of such a fault, and the remarks introduced by them to support such a prejudicial question are either falsely asserted or are only mistakes of their system,

⁽¹⁾ Phil. Works, Vol. X., p. 19 and foll.

The souls who had observed,
By my breathing, that I was yet alive,
Marvelling, grew pale.

ROBERT ARDIGÒ.

Padua, the 28th January, 1908, on the
author's eightieth birthday.

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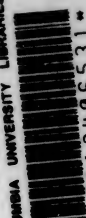


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